

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See Form PCT/ISA/210 (sheet 2)**

Applicant's or agent's file reference

Cas 2314PCT/CM

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/EP2004/014515

International filing date (day/month/year)

21.12.2004

Priority date (day/month/year)

08.01.2004

International Patent Classification (IPC) or both national classification and IPC

G01S5/14, G01 S1/02, G01 S1/04, H04L25/49, H04B1/69

Applicant

INSTITUT DE MICROTECHNIQUE

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	5-13	YES
	Claims	1-4, 14-17	NO
Inventive step (IS)	Claims	10-13	YES
	Claims	5-9, 14-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO
2. Citations and explanations:			
<p>1. Reference is made to the following documents:</p> <p>D1: US 2003/095609 A1</p> <p>D2: US-B1-6 483 461</p> <p>D3: US 2003/058963 A1</p> <p>D4: US 2003/198308 A1</p> <p>D5: US 2004/002347 A1</p>			
<p>2. Novelty and inventive step</p>			
<p>2.1 Claim 1</p> <p>Document D1 discloses (see D1 figure 9 and 8) a method of wireless data communication between a transmitter device (802) having a first broadband antenna (824) for the transmission of ultra wideband coded data signals, and a receiver device (902) having a second ultra wideband antenna (904) for the reception of the direct and/or multiple path coded data signals (see paragraph [0127]-[0128], figure 7B "direct path" is the direct route "path 1" and "path 2" represent multipaths), the data transmitted being defined by one or more sequences of N pulses where N is an integer greater than 1, the arrangement of the</p>			

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Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

N pulses of each sequence representing a coding of the data which relates to the transmitter device, (see paragraph [0088]-[0092] and figures 2A, 2B)

characterized in that

the N pulses of a pulse sequence of the direct and/or multiple path coded data signals received by the receiver device are each processed in one from among N corresponding reception time windows, each of the N reception time windows being positioned in time as a function of a theoretical known arrangement of the N pulses of the signals transmitted by the transmitter device, and in that an addition operation (934) on the N windows is carried out in the receiver device

(see figure 11 and paragraph [0167]-[0168], the numbers 1100(a), 1100(b) ... 1100(d) also represent time windows, which are positioned in time as a function of a theoretical arrangement of the transmission coding, each window containing four pulses 1101(a)-1104(a) which have been integrated, thereby amounting to carrying out an addition of each of the N windows)

so that the amplitude level of the pulses which is added is greater than the amplitude level of the noise picked up by the receiver device.

(see paragraph [0118]-[0120] it is the very aim of time-modulation systems to carry out a coherent integration, or window addition to obtain a processing gain and to "extract" the added pulses from the noise of the receiver)

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Therefore the subject matter of claim 1 is novel (PCT Article 33(2)).

2.2 Claims 2 & 15

The subject matter of claim 2 is known from D1 (see paragraph [0118], [0157]: the receiver necessarily uses a reception clock which is synchronized with the clock of the transmitter by the demodulation of an identical code).

Therefore the subject matter of claims 2 & 15 is not novel (PCT Article 33(2)).

2.3 Claim 3

The temporal, voltage polarity or phase modulations are alternatives known from D1 (see D1 paragraph [76], [90], [110]). Consequently the subject matter of claim 3 is not novel (PCT Article 33(2)).

2.4 Claim 4

In D1 the coded data signals necessarily comprise a synchronization frame for allowing the identification of the transmitter and allowing the synchronization of the receiver before performing the demodulation, since this involves a time modulation or else PPM modulation (pulse position modulation) using orthogonal codes (see D1 paragraph [0017] and page 12, right column, lines 9-14). Thus the subject matter of claim 4 is not novel (PCT Article 33(2)).

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performing the operation of integration or of
addition of the windows.

2.10 Claim 14

Document D1 discloses *a receiver device (902) for the implementation of the method of communication according to claim 1, comprising an oscillation stage (918) delivering at least one clock signal (916) at a defined frequency, a signal processing unit (932, 934, 936, 938) linked to the oscillator stage, and an analogue digital conversion stage (910, see paragraph [0156]) of the coded signals received by a broadband antenna (904)*

characterized in that

the signal processing unit comprises means of addition (934) of time windows so as to carry out a coherent addition of the pulses of each of the time windows.

(see figure 11 and paragraph [0167]-[0168], the numbers 1100(a), 1100(b) ... 1100(d) also represent time windows, which are positioned in time as a function of a theoretical arrangement of the transmission coding, each window containing four pulses 1101(a)-1104(a) which are integrated, thereby amounting to carrying out an addition of each of the N windows)

consequently the subject matter of claim 14 is not novel
(PCT Article 33(2)).

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2.11 Claim 16

In D1 the means of addition of time windows (934) receive digital signals from the analogue-digital conversion stage (910) so as to carry out a digital window addition (see page 12 right column lines 9-14).

Thus the subject matter of claim 16 is not novel (PCT Article 33(2)).

2.12 Claim 17

The addition of analogue windows is considered to be a commonplace alternative to the addition of digital windows and does not suggest an inventive step (PCT Article 33(3)).

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Should the proceedings be continued the following points should be dealt with:

- (i) The independent claims which are retained should be presented according to the two-part form [Rule 6.3(b)] vis-à-vis D1.
- (ii) The text of the description ought to be made consistent with that of the new claims to be filed [Rule 5.1(a) (iii)].
- (iii) The applicant is reminded that the application may not be modified in such a way that its subject matter extends beyond the content of the application as filed [Article 34(2)b].